

**Claims:**

Amend claims 24-77 as follows:

24. Claim 24 (currently amended): A solid-chemical composition which provides the capacity to extract and absorb hydrophobic chemical contaminants, and to promote the biodegradation thereof for the anaerobic bioremediation of chemical contaminants by anaerobic bioremediation of the chemical contaminants, comprising a dry mixture of:
- one or more plant fiber-containing materials ~~selected~~ from plant families selected from Leguminosae and Phaeophyta, comprising from about 20% to 97%, by weight percent, of said composition; and
  - one or more plant fiber-containing materials ~~selected~~ from plant families selected from Gossypium and Cannabaceae, comprising from about 3% to 80%, by weight percent, of said composition.
25. Claim 25 (previously amended): A chemical composition in accordance with Claim 24, further comprising an ammonium-free source of inorganic nitrogen selected from the group consisting of sodium nitrate, sodium-potassium nitrate, and potassium nitrate.
26. Claim 26 (previously amended): A chemical composition in accordance with Claim 24, further comprising a source of complex, biologically hydrolyzable nutrient phosphorus in an amount of from about 0.25% to 15%, by weight percent, of said composition wherein said source of complex, biologically hydrolyzable nutrient phosphorus is selected from the group consisting of ringed metaphosphates and linear polyphosphates.
27. Claim 27 (previously canceled): ~~A chemical composition in accordance with Claim 24, whereby said source of complex, biologically hydrolyzable nutrient phosphorus comprises one or more further selected from the group consisting of sodium hexametaphosphate, sodium trimetaphosphate, sodium tripolyphosphate, sodium-potassium tripolyphosphate, and tetrasodium pyrophosphate.~~

28. Claim 28 (previously amended): A chemical composition in accordance with Claim 24, further comprising a source of chelating agents in an amount of from about 0.01% to 5%, by weight percent, of said composition wherein said chelating agents are selected from the group consisting of citric acid, humic acid, fulvic acid, sodium citrate, nitrilotriacetic acid (NTA), and ethylenediaminetetraacetic acid (EDTA).
29. Claim 29 (previously amended): A chemical composition in accordance with Claim 24, further comprising inoculum containing one or more microorganisms, wherein said inoculum is in an amount of from about 0.001% to 2%, by weight percent, of said composition and said microorganisms are selected from the group consisting of soil bacteria, metal-reducing bacteria, legume bacteria, plant-fiber degrading bacteria and plant-fiber degrading fungi.
30. Claim 30 (currently amended): A chemical composition in accordance with Claim 24, further comprising one or more plant fiber-containing materials in an amount of from about 0.5% to 30%, by weight percent, of said composition, wherein said plant materials are ~~selected~~ from plant families selected from *Triticum* and *Aegilops*.
31. Claim 31 (currently amended): A chemical composition in accordance with Claim 24, wherein said plant fiber-containing materials from the plant family *Leguminosae* are selected from the group consisting of *Lespedeza* spp., *Medicago* spp., *Vicia* spp., *Glycine* spp., *Lathyrus* spp. and *Trifolium* spp.
32. Claim 32 (currently amended): A chemical composition in accordance with Claim 24, wherein said plant fiber-containing materials from the plant family *Phaeophyta* are ~~further selected from the group consisting of~~ from the plant species *Sargassum* spp.
33. Claim 33 (currently amended): A chemical composition in accordance with Claim 24, wherein said plant fiber-containing materials from the plant family *Gossypium* are selected from the group consisting of cotton seed, cotton plants, cotton lint, ~~and other fibrous cotton-containing materials produced by the cultivation or processing of cotton.~~

34. Claim 34 (currently amended): A chemical composition in accordance with Claim 24, wherein said plant fiber-containing materials from the plant family *Cannabaceae* are selected from the group consisting of hemp and hops plants.
35. Claim 35 (currently amended): A chemical composition in accordance with Claim 29, further comprising a further source of microorganisms wherein said microorganisms are selected from the group consisting of microorganisms ~~associated with~~ contained by acid-mine drainage and ~~microorganisms associated with the~~ waste products produced from the treatment of acid-mine drainage.
36. Claim 36 (currently amended): A chemical composition in accordance with Claim 29, wherein said microorganisms are ~~further from species~~ selected from the group consisting of *Rhizobium* spp., *Bradyrhizobium* spp., *Fibrobacter* spp., *Clostridium* spp., *Pseudomonas* spp., *Geobacter* spp. and *Thiobacillus* spp. ✓
37. Claim 37 (currently amended): A chemical composition in accordance with Claim 30, wherein said plant fiber-containing materials ~~of from~~ the plant families are selected from the group consisting of wheat, oats, barley, and rye.
38. Claim 38 (previously amended): A chemical composition in accordance with Claim 24, wherein said plant materials are in a form selected from the group consisting of powders, flours, pellets, meals, mids, husks, hulls, hays and straws.
39. Claim 39 (previously amended): A chemical composition in accordance with Claim 30, wherein said plant materials are in a form selected from the group consisting of powders, flours, pellets, meals, mids, husks, hulls, hays and straws.
40. Claim 40 (previously amended): A chemical composition in accordance with Claim 31, wherein said plant materials are in a form selected from the group consisting of powders, flours, pellets, meals, mids, husks, hulls, hays and straws.

41. Claim 41 (previously amended): A chemical composition in accordance with Claim 32 wherein said plant materials are in a form selected from the group consisting of powders, flours, pellets, meals, mids, husks, hulls, hays and straws.
42. Claim 42 (previously amended): A chemical composition in accordance with Claim 33, wherein said plant materials are in a form selected from the group consisting of powders, flours, pellets, meals, mids, husks, hulls, hays and straws.
43. Claim 43 (previously amended): A chemical composition in accordance with Claim 34 wherein said plant materials are in a form selected from the group consisting of powders, flours, pellets, meals, mids, husks, hulls, hays and straws.
44. Claim 44 (previously amended): A chemical composition in accordance with Claim 24, wherein said composition is prepared as one or more forms selected from the group consisting of granules, briquettes, pellets, tablets, and capsules.
45. Claim 45 (previously amended): A chemical composition in accordance with Claim 25, wherein said composition is prepared as one or more forms selected from the group consisting of granules, briquettes, pellets, tablets, and capsules.
46. Claim 46 (previously amended): A chemical composition in accordance with Claim 26, wherein said composition is prepared as one or more forms selected from the group consisting of granules, briquettes, pellets, tablets, and capsules.
47. Claim 47 (canceled): ~~A chemical composition in accordance with Claim 27, whereby wherein said composition is prepared as one or more forms selected from the group consisting of granules, briquettes, pellets, tablets, and capsules.~~
48. Claim 48 (previously amended): A chemical composition in accordance with Claim 28, wherein said composition is prepared as one or more forms selected from the group consisting of granules, briquettes, pellets, tablets, and capsules.

49. Claim 49 (previously amended): A chemical composition in accordance with Claim 29, wherein said composition is prepared as one or more forms selected from the group consisting of granules, briquettes, pellets, tablets, and capsules.
50. Claim 50 (previously amended): A chemical composition in accordance with Claim 30, wherein said composition is prepared as one or more forms selected from the group consisting of granules, briquettes, pellets, tablets, and capsules.
51. Claim 51 (previously amended): A chemical composition in accordance with Claim 31, wherein said composition is prepared as one or more forms selected from the group consisting of granules, briquettes, pellets, tablets, and capsules.
52. Claim 52 (previously amended): A chemical composition in accordance with Claim 32, wherein said composition is prepared as one or more forms selected from the group consisting of granules, briquettes, pellets, tablets, and capsules.
53. Claim 53 (previously amended): A chemical composition in accordance with Claim 33, wherein said composition is prepared as one or more forms selected from the group consisting of granules, briquettes, pellets, tablets, and capsules.
54. Claim 54 (previously amended): A chemical composition in accordance with Claim 34, wherein said composition is prepared as one or more forms selected from the group consisting of granules, briquettes, pellets, tablets, and capsules.
55. Claim 55 (previously amended): A chemical composition in accordance with Claim 35, wherein said composition is prepared as one or more forms selected from the group consisting of granules, briquettes, pellets, tablets, and capsules.
56. Claim 56 (previously amended): A chemical composition in accordance with Claim 36, wherein said composition is prepared as one or more forms selected from the group consisting of granules, briquettes, pellets, tablets, and capsules.

57. Claim 57 (previously amended): A chemical composition in accordance with Claim 37, wherein said composition is prepared as one or more forms selected from the group consisting of granules, briquettes, pellets, tablets, and capsules.
58. Claim 58 (previously amended): A chemical composition in accordance with Claim 38, wherein said composition is prepared as one or more forms selected from the group consisting of granules, briquettes, pellets, tablets, and capsules.
59. Claim 59 (previously amended): A chemical composition in accordance with Claim 39, wherein said composition is prepared as one or more forms selected from the group consisting of granules, briquettes, pellets, tablets, and capsules.
60. Claim 60 (previously amended): A chemical composition in accordance with Claim 40, wherein said composition is prepared as one or more forms selected from the group consisting of granules, briquettes, pellets, tablets, and capsules.
61. Claim 61 (previously amended): A chemical composition in accordance with Claim 41, wherein said composition is prepared as one or more forms selected from the group consisting of granules, briquettes, pellets, tablets, and capsules.
62. Claim 62 (previously amended): A chemical composition in accordance with Claim 42, wherein said composition is prepared as one or more forms selected from the group consisting of granules, briquettes, pellets, tablets, and capsules.
63. Claim 63 (previously amended): A chemical composition in accordance with Claim 43, wherein said composition is prepared as one or more forms selected from the group consisting of granules, briquettes, pellets, tablets, and capsules.
64. Claim 64 (previously amended): A chemical composition in accordance with Claim 24, wherein said composition is prepared as one or more forms selected from the group consisting of granules, briquettes, pellets, tablets, and capsules.

65. Claim 65 (previously amended): A chemical composition in accordance with Claim 29, wherein said inoculum is in a form selected from the group consisting of dehydrated, dried and freeze-dried forms.
66. Claim 66 (previously amended): A chemical composition in accordance with Claim 24, further comprising a binding agent in an amount of from about 0.1% to 7%, by weight percent, of said composition.
67. Claim 67 (previously amended): A chemical composition in accordance with Claim 66, wherein said binding agent is selected from the group consisting of pre-gelled starch, starch, molasses, barley malt extract, corn syrup, vegetable oils, vegetable fats, animal oils, animal fats, animal lards, glycerin, gelatine, bentonite, montmorillonite, kaolinite, and calcium carbonate.
68. Claim 68 (currently amended): A chemical composition in accordance with Claim 24, wherein said plant fiber-containing materials are cultivated *in-situ* within contaminated environmental media.
69. Claim 69 (currently amended): A chemical composition in accordance with Claim 30 wherein said plant fiber-containing materials are cultivated *in-situ* within contaminated environmental media.
70. Claim 70 (currently amended): A chemical composition in accordance with Claim 31 wherein said plant fiber-containing materials are cultivated *in-situ* within contaminated environmental media.
71. Claim 71 (currently amended): A chemical composition in accordance with Claim 32, wherein said plant fiber-containing materials are cultivated *in-situ* within contaminated environmental media.

72. Claim 72 (currently amended): A chemical composition in accordance with Claim 33 wherein said plant fiber-containing materials are cultivated *in-situ* within contaminated environmental media.
73. Claim 73 (currently amended): A chemical composition in accordance with Claim 34, wherein said plant fiber-containing materials are cultivated *in-situ* within contaminated environmental media.
74. Claim 74 (currently amended): A chemical composition in accordance with Claims 68, 69, 70, 71, 72 or 73, wherein said plant fiber-containing materials which are cultivated *in-situ* are subsequently exposed to one or more periods of freezing temperatures.
75. Claim 75 (previously amended): A chemical composition in accordance with Claim 24, wherein said solid-chemical composition is supplemented with a liquid-chemical composition comprising one or more ingredients selected from the group consisting of nitrates, nitrites, phosphates, surfactants, alcohols, vegetable oils, mineral oils, corn syrup, barley malt extract, molasses, humic acids, fulvic acids and chelating agents.
76. Claim 76 (currently amended): A method for bioremediation of hydrophobic chemical contaminants in environmental media comprising:
- applying said solid-chemical composition in accordance with Claims 24, 25, 26, ~~27~~, 28 or 29 to the contaminated environmental media in an amount of 0.1 g to 1000 g per kg of the contaminated environmental media;
  - extracting and absorbing said hydrophobic chemical contaminants from said environmental media; and
  - biodegrading said hydrophobic chemical contaminants.



77. Claim 77 (currently amended): A method for bioremediation of hydrophobic chemical contaminants in environmental media comprising:
- a. applying said solid-chemical composition in accordance with Claims 44, 45, 46, ~~47~~, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, or 63 to the contaminated environmental media in an amount of 0.1 g to 1000 g per kg of the contaminated environmental media;
  - b. extracting and absorbing said hydrophobic chemical contaminants from said environmental media; and
  - c. biodegrading said hydrophobic chemical contaminants.